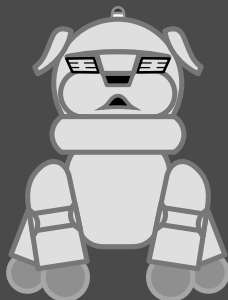


**SONY**<sup>®</sup>

4-664-548-11(1)



**ERS-31L**  
**Operating Instructions**

**Entertainment Robot AIBO**

# ***For Customers in the U.S.A. and Canada***

## **Safety Information**

### **Owner's Record**

The model number and serial number are located inside the cover of the unit and on the side of the supplied AC adapter. Record the serial number in the space provided below. Refer to the model and serial number whenever you call upon your Sony AIBO Customer Link.

Model No. ERS-31L

Serial No. \_\_\_\_\_

### **Warning**

- To prevent fire or shock hazard, do not expose the robot to rain or moisture.
- To avoid electrical shock, do not open the enclosure. Refer servicing to qualified personnel only. (Contact the AIBO Customer Link.) (page 8)
- Periodically examine the AC adapter for conditions that may result in the risk of fire, electrical shock, or injury to persons (such as damage to the cords, blades, housing) and in the event of such conditions, the AC adapter should not be used until properly repaired or replaced.
- Not Intended for Children Under 8 Years.
- Vérifiez périodiquement si l'adaptateur secteur ne présente pas des conditions susceptibles de provoquer un incendie, des décharges électriques ou des blessures aux personnes (comme des dommages aux câbles, aux oreilles ou au boîtier) et, en présence de telles conditions, l'adaptateur secteur ne peut plus être utilisé avant son réparation ou remplacement.
- Cet appareil n'est pas destiné aux enfants de moins de 8 ans.

# DISPOSAL OF LITHIUM ION BATTERY

## LITHIUM ION BATTERY DISPOSE OF PROPERLY

You can return your unwanted lithium ion batteries to your nearest Sony Service Center.

### Note

In some areas the disposal of lithium ion batteries in household or business trash may be prohibited.

For the Sony AIBO Customer Link call 1-800-427-2988 in the United States or contact us via email at [aibosupport@info.sel.sony.com](mailto:aibosupport@info.sel.sony.com).

! Do not handle damaged or leaking lithium ion battery.

! Danger of explosion if the battery is incorrectly replaced. Replace only with the ERA-301B1. Use of another battery may present a risk of fire or explosion. Discard used batteries according to the manufacturer's instructions.

! The battery pack used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 140°F (60°C) or incinerate. Dispose of used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire.

### **RECYCLING LITHIUM-ION RECHARGEABLE BATTERIES**

Lithium-ion rechargeable batteries are recyclable.

You can help preserve our environment by returning your used rechargeable batteries to the collection and recycling location nearest you.

For more information regarding recycling of rechargeable batteries, call toll free 1-800-822-8837, or visit <http://www.rbrc.org/>

Caution: Do not handle damaged or leaking lithium-ion batteries.



## Regulatory Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

# ***For Customers in Europe and Australia***

## **Safety Information**

### **WARNING**

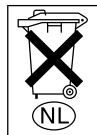
- To prevent fire or shock hazard, do not expose the robot to rain or moisture.
- To avoid electrical shock, do not open the enclosure. Refer servicing to qualified personnel only. (Contact the AIBO Customer Link.) (page 8)
- Periodically examine the AC adapter for conditions that may result in the risk of fire, electric shock, or injury to persons (such as damage to the cords, blades, housing) and in the event of such conditions, the AC adapter should not be used until properly replaced.
- The robot is not intended or recommended for children under 8 years old.
- The robot must be used only with the recommended AC adapter (ERA-201P1).
- The AC adapter is not a toy.
- Small parts can be swallowed.
- If the external flexible cable or cord is damaged, it must be replaced or repaired only by the manufacturer, an authorised service agent or a similar qualified person in order to avoid a hazard.
- All material for fastening or packing purposes are not part of the robot and should be disregarded for children's safety.
- For information regarding AC adapter, station, and lithium ion battery pack, please refer to the manuals provided separately.

## DISPOSAL OF LITHIUM ION BATTERY

- ! Do not handle damaged or leaking lithium ion batteries.
- ! Danger of explosion if the battery is incorrectly replaced. Replace only with the ERA-301B1. Discard used batteries according to the manufacturer's instructions.
- ! The battery pack used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 60 °C (140 °F) or incinerate. Dispose of used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire.

### Voor de Klanten in Nederland (For customers in the Netherlands)

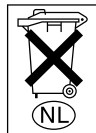
Gooi de batterij niet weg maar lever deze in als klein chemisch afval (KCA).



## Opmerking betreffende de geheugen-backupbatterij

### (Note on a battery for memory backup)

Dit apparaat bevat een vast ingebouwde batterij die niet vervangen hoeft te worden tijdens de levensduur van het apparaat. Raadpleeg uw leverancier indien de batterij toch vervangen moet worden.



De batterij mag alleen vervangen worden door vakbekwaam servicepersoneel. Gooi de batterij niet weg maar lever deze in als klein chemisch afval (KCA). Lever het apparaat aan het einde van de levensduur in voor recycling, de batterij zal dan op correcte wijze verwerkt worden.

## **Regulatory Information**

This product has been tested and found to conform to the following Safety Standards.

Toy Directive 88/378/EEC, EN50088/96 + A1/96 + A2/97, EN71-1/98, DIN EN 71-2/01.94, DIN EN 71-3/03.95

EMC Directive 89/336/EEC

EMI EN55022/98, EN55014/93 + A1/97+A2/99, EN50081-1/92

EMS : EN55024/98, EN55014-2/97, EN61000-3-2/95, EN61000-3-3/95, EN50082-1/97

AC Adapter and Lithium Ion Batteries have been tested all together as a system and found to conform to the following Safety Standards.

LVD 73/23/EEC + 93/68/EEC

EN60950/92 + A1/93 + A2/93 + A3/95 + A4/97 + A11/97

EN60065/98

EN61558-1/97 + A1/98

EN61558-2-7/97

CE (EMC) Marking Conformity Remarks

- a) This equipment complies with EN55022.  
Class B digital for use in following areas : residential, business, and light-industrial.
- b) This product conforms with the following European Directive:  
89/336/EEC (EMC directive)

**SONY®**

Sony Corporation

6-7-35 Kitashinagawa, Shinagawa-ku, Tokyo 141-0001 JAPAN

Please keep all information for future reference.

## **Customer Support**

How can you contact the AIBO Customer Link?

In the U.S.A. and Canada:

Call 1-800-427-2988 (U.S.A.)

Email address: [aibosupport@info.sel.sony.com](mailto:aibosupport@info.sel.sony.com)

© 2002 Sony Corporation. Reproduction in whole or in part without written permission is prohibited. All rights reserved.



# **Table of Contents**

## ***Introduction***

What is AIBO? .....	12
ERS-31L .....	13
Checking the supplied accessories .....	15
Index to parts and controls .....	16
AIBO exterior .....	16
AIBO's inner unit .....	18
Stand .....	20

## ***Charging the battery pack***

Inserting the battery pack .....	22
Charging the battery pack .....	24

## ***Playing with AIBO***

Inserting or removing a "Memory Stick" .....	30
Inserting a "Memory Stick" .....	30
Removing the "Memory Stick" .....	32
Starting up AIBO .....	33

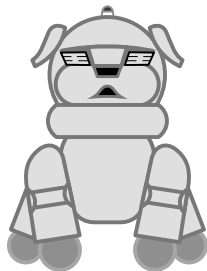
When not playing with AIBO .....	35
Pausing AIBO .....	35
Replacing the battery pack .....	36
Setting the volume level of the musical tone .....	39

## ***Additional information***

Notes on use .....	42
On handling AIBO .....	42
Moisture condensation .....	44
On handling the AC adapter .....	44
On handling the battery pack .....	44
On cleaning .....	45
Troubleshooting .....	46
Clinic mode .....	46
Changing AIBO to clinic mode .....	46
Check list for clinic mode .....	47
Symptoms and remedies .....	50
Limited warranty (for the U.S.A. only) .....	54
Service procedure (for the U.S.A. only) .....	57
Specifications .....	58
Index .....	61
Designer of AIBO ERS-31L .....	63

# ***Introduction***

This chapter introduces you to the Entertainment Robot AIBO ERS-31L.



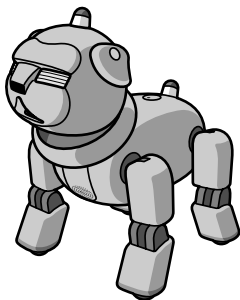
## What is AIBO?



“AIBO” is the name given to the Sony entertainment robot. Developed to encourage human and robot interaction, AIBO creates and introduces you to new pleasures and lifestyles.

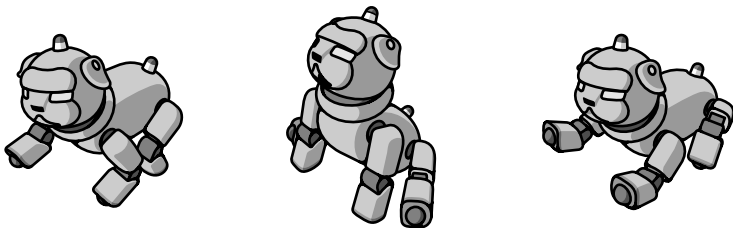
The name “AIBO” is coined from the words “A.I. (Artificial Intelligence),” “eye” and “robot.” In Japanese, the word “aibou” means “partner” or “pal.”

For the newest information on AIBO, go to the following homepage:  
<http://www.aibo.com/>




## ERS-31L

To comfortably coexist with people, AIBO ERS-31L was designed with four legs, a head, and a tail, and a total of fifteen internal motors that enable it to walk, sit, or lie down in a natural way. It can also use its horn light to express emotions.



“OPEN-R” is the standard interface for the entertainment robot system that Sony is actively promoting. This interface expands the capability of the entertainment robot through a flexible combination of hardware and interchangeable software to suit various applications. AIBO ERS-31L conforms to the OPEN-R version 1.1.1.

“AIBO,” the AIBO logo , “OPEN-R,” and the OPEN-R logo  are registered trademarks of Sony Corporation. “Memory Stick,”

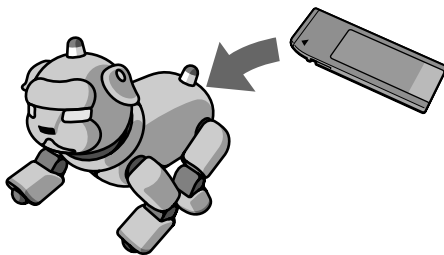
“**MEMORY STICK**,” and “” are trademarks of Sony Corporation. In this manual, the “TM” mark has been omitted.

## AIBO-ware “Memory Sticks”

To play with AIBO ERS-31L, you must provide it with optional AIBO-ware “Memory Stick,” a variety of which are available, depending on how you want to enjoy your AIBO. Without AIBO-ware, AIBO is just like a body without a mind. AIBO-ware loaded from a “Memory Stick” works as AIBO’s mind and determines its character and functions.

- An AIBO-ware “Memory Stick” is a “Memory Stick” created just for AIBO, containing application software for operating AIBO.
- Before purchasing an AIBO-ware “Memory Stick,” make sure the AIBO-ware is compatible with your AIBO model.

### AIBO



### ***AIBO-ware “Memory Stick” (not supplied)***

You can select different AIBO-ware, depending on the way you want to enjoy AIBO. For example, there is AIBO-ware for raising AIBO or for giving it a different character.

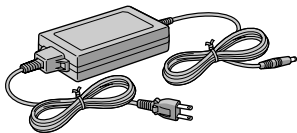
#### **Note**

If you start up AIBO without inserting an AIBO-ware “Memory Stick,” AIBO enters clinic mode in which its sensors and other parts are checked (page 46).

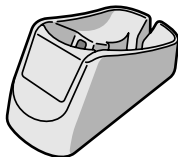
## Checking the supplied accessories

Check to make sure you have the following items before you play with AIBO.

### ■ AC adapter ERA-201P1 (1)



### ■ Stand (1)



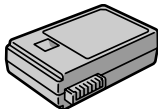
### ■ AC adapter conversion plug\* (1)



### ■ Pink ball (1)



### ■ Lithium ion battery pack ERA-301B1 (1)



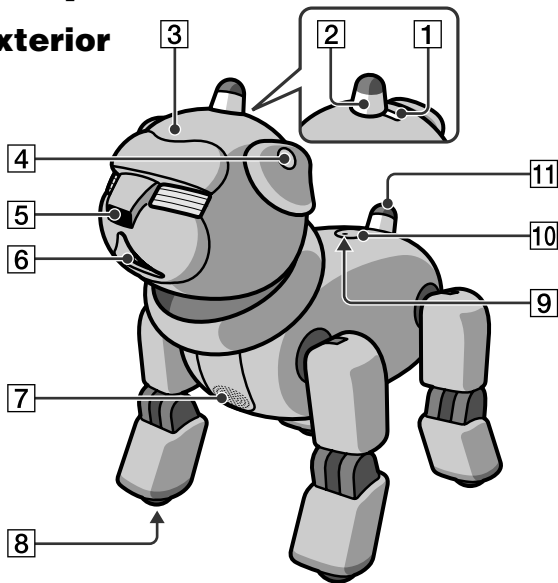
### ■ Documentation

- AIBO Operating Instructions
- Congratulations on becoming a new AIBO owner

\* Keep cards with magnetic data strips or magnetic recording media away from the AC adapter conversion plug. The data on such magnetic media may be erased by the magnet within the conversion plug.

# Index to parts and controls

## AIBO exterior



### Notes

- Do not attach stickers on AIBO's color camera ([6]) or distance sensor ([5]).
- Do not attach stickers onto or insert anything into AIBO's joints or other movable parts.
- When lifting AIBO, firmly grasp it by its back (page 33). Never lift it by its head, ears, collar, legs, or tail.
- The gray area between AIBO's chin and collar is not a switch. Do not insert your fingers into this area as they may get caught and cause damage to AIBO.



**1 Mode indicator (located behind the horn)**

Shows AIBO's operation mode.

**2 Horn light**

Lights up in various colors to indicate AIBO's emotional state.

**3 Head**

A switch within AIBO's head detects movement whenever you gently push AIBO's head upward or downward.

**4 Stereo microphone**

Allows AIBO to pick up surrounding sounds.

**5 Distance sensor**

AIBO uses this sensor to measure the distance between it and an object.

**6 Color camera**

Allows AIBO to recognize the objects by color, shape, and movement.

**7 Speaker**

Emits various musical tones and sound effects.

**8 Paw switches**

Located on the bottom of each paw.

**9 Back light**

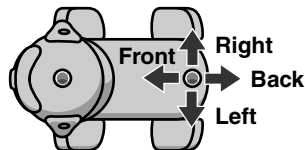
- Lights up green when AIBO is in active mode.
- Flashes green when AIBO is preparing for pause mode.
- Lights up orange when the internal battery pack is being charged.
- Flashes orange when an error has occurred during charging.
- Turns off when AIBO is in pause mode or the battery pack is completely charged.

**10 Pause button**

Press to activate AIBO or to pause AIBO.

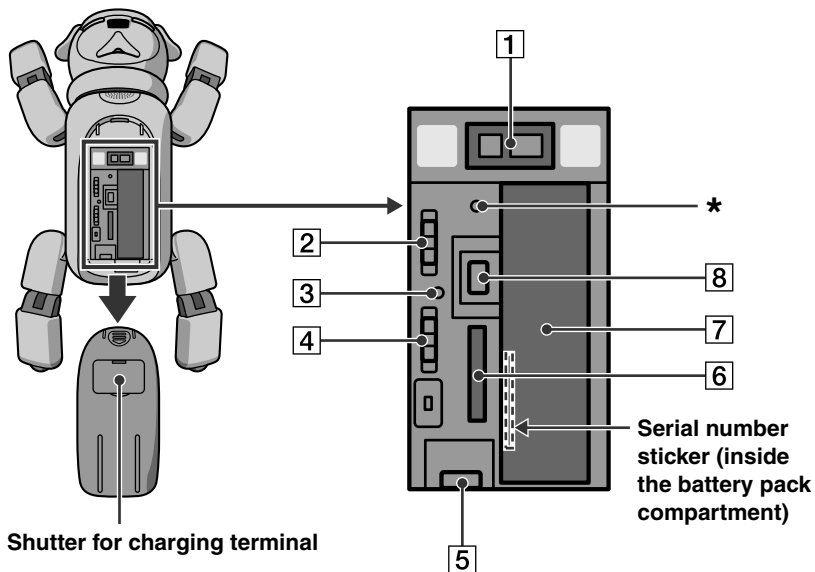
**11 Tail switch**

Used for giving AIBO commands. This switch can be pushed in four directions. The commands given through the tail vary with the AIBO-ware used.

**Movable in four directions**

## AIBO's inner unit

The illustration shows AIBO with its cover removed.



### Note

Do not touch the charging terminal with your hand. Doing so may soil the terminal and cause poor contact.

**1 Charging terminal**

Connect the supplied AC adapter here with the supplied AC adapter conversion plug. When AIBO is placed on the supplied stand with an optional Energy Station Core installed, this terminal directly touches AIBO's internal battery pack to charge it.

**2 VOLUME switch**

Used to adjust the volume of the speaker in four levels including mute.

**3 "Memory Stick" access indicator**

Lights up while AIBO is accessing the "Memory Stick." During this time, the ▲ button and the BATT ▲ latch are deactivated. When this indicator is lit, do not attempt to remove the "Memory Stick."

**4 RESERVED switch**

This switch is reserved for functions to be added in the future.

**5 BATT ▲ latch**

Flip this latch towards AIBO's tail to remove the battery pack.

**6 "Memory Stick" insertion slot**

Insert the AIBO-ware "Memory Stick" (not supplied) into this slot.

**7 Battery pack insertion slot**

Insert the supplied or an optional lithium ion battery pack into this slot.

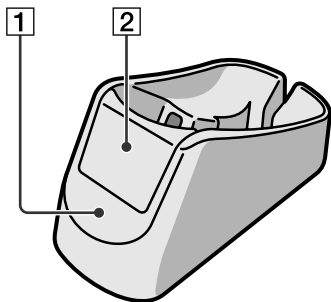
**8 ▲ button**

Press this button to remove the "Memory Stick."

**\* Emergency release hole**

When the "Memory Stick" or battery pack cannot be removed because of a mechanical problem, etc., insert a pointed object into this hole and push. Do not use anything that breaks easily such as a toothpick. Do not use this hole under normal circumstances.

## Stand



### 1 Stand

Place AIBO on the stand while it is in pause mode or while it is charging.

### 2 Decoration plate

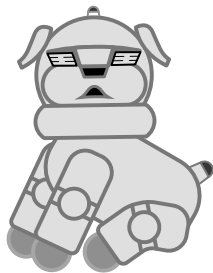
Remove this plate when the optional Energy Station Core is attached to the stand.

### Note

The supplied stand is for use with AIBO ERS-310 series only.

## ***Charging the battery pack***

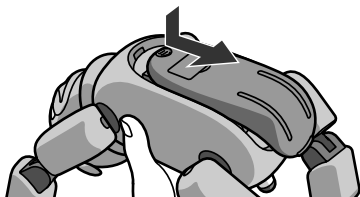
This chapter explains how to charge AIBO's battery pack.



## Inserting the battery pack

The battery pack supplied with AIBO comes partially charged. It is recommended that you charge the battery pack fully before you play with AIBO. To charge the battery pack, first insert it as described below.

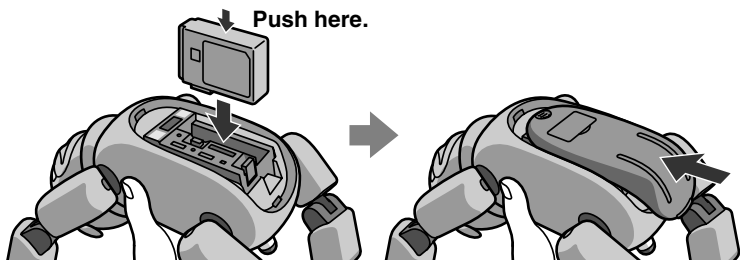
- 1** Grasp AIBO securely by the body, turn it upside down, and remove its cover by pushing the ▲ mark towards AIBO's tail.



### Notes

- Lift AIBO by the body, not by its extremities. Do not hold AIBO by its collar. Your finger may get caught between the collar and AIBO's head or body.
- AIBO's surface is very smooth. Be careful not to drop AIBO while lifting it.
- Do not touch the charging terminal with your hand. Doing so may soil the terminal and cause poor contact.
- Use only the supplied battery pack type ERA-301B1.

- 
- 2** Insert the supplied battery pack in the direction of the arrow until it clicks into place, and then replace the cover.



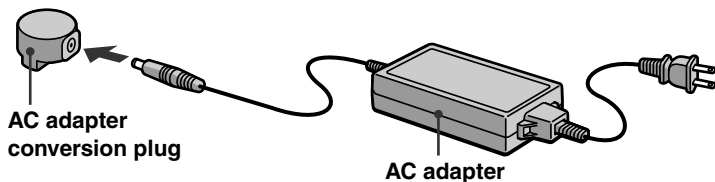
---

For details on how to replace the battery pack, see page 36.

## ***Charging the battery pack***

You can use the supplied AC adapter and the conversion plug to charge the battery pack while it is inserted into AIBO. It is recommended that you charge the battery pack at room temperature (10° to 30°C (50° to 86°F)). At room temperature, it takes about 2 hours to fully charge the battery pack.

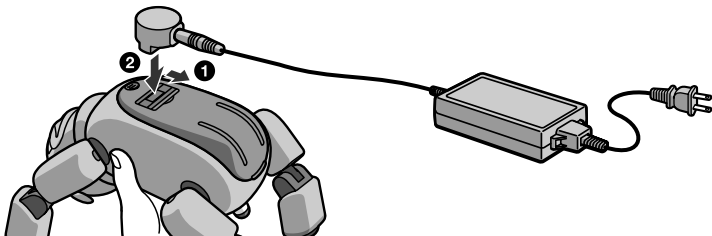
- 1** Connect the AC adapter to the AC adapter conversion plug securely.





- 
- 2** Open the charging terminal shutter on the cover (1) and connect the conversion plug to the charging terminal (2).

The conversion plug attaches by magnet.

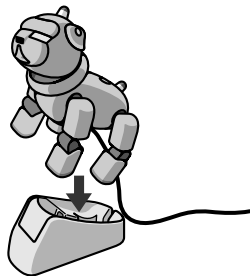


**Note**

Do not remove the cover when attaching the conversion plug. Removing the cover may prevent the conversion plug from connecting properly to the terminal.

- 
- 3** With the conversion plug attached, place AIBO on the stand as shown below.

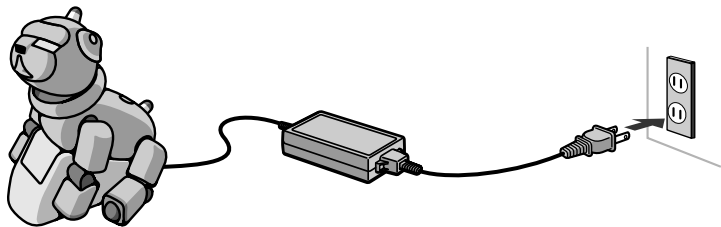
Be sure to draw the AC adapter cord through the groove and out from the back of the stand.



---

#### 4 Connect the AC adapter to a wall outlet.

When AIBO is connected to the AC adapter, it will not enter active mode even when you press the pause button.



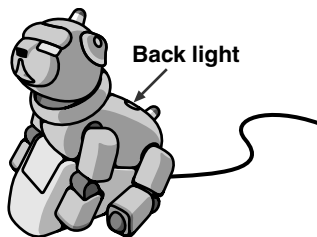
---

##### ***While charging***

The back light lights up orange.

##### ***When charging has finished***

The back light turns off.

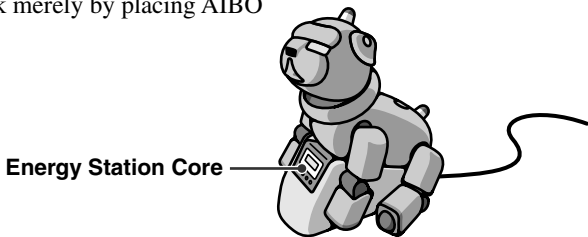


## Notes

- If the back light flashes orange while you are charging the battery pack, check that the battery pack is inserted correctly. If the flashing of the back light persists, contact AIBO Customer Link (page 8).
  - If you connect the AC adapter to AIBO while it is in active mode, AIBO will change to pause mode automatically and charging of the battery pack starts.
  - When you remove the AC adapter conversion plug from AIBO, be sure to grasp the plug as you pull it out.
  - After removing the conversion plug, be sure to close the charging terminal shutter.
- 

## ■ Using the Energy Station Core ERA-301P2 (not supplied)

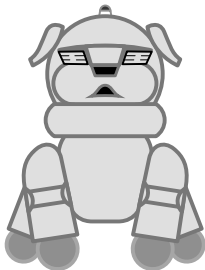
When the optional Energy Station Core is attached to the stand, you can charge AIBO's internal battery pack merely by placing AIBO on the stand.





## ***Playing with AIBO***

This chapter explains procedures that are necessary for playing with AIBO, such as inserting the AIBO-ware “Memory Stick,” adjusting the volume of the musical tones, and replacing the battery pack. Note that optional AIBO-ware is required in order to play with AIBO.



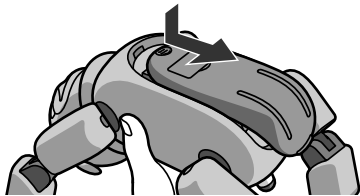
## **Inserting or removing a “Memory Stick”**

To play with AIBO, insert an optional “Memory Stick” into AIBO. For details, refer to the “User’s Guide” supplied with the respective AIBO-ware “Memory Stick.” When you start up AIBO without inserting an AIBO-ware “Memory Stick,” it enters clinic mode in which AIBO’s sensors and other parts are checked (page 46).

### **Inserting a “Memory Stick”**

Be sure to insert the “Memory Stick” only after pausing AIBO. When AIBO is in pause mode, the back light turns off.

- 
- 1** Grasp AIBO securely by the body, turn it upside down, and remove its cover by pushing the ▲ mark towards AIBO’s tail.



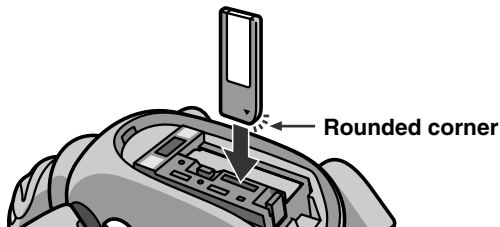
## Notes

- Lift AIBO by the body, not by its extremities. Do not hold AIBO by its collar. Your finger may get caught between the collar and AIBO's head or body.
- AIBO's surface is very smooth. Be careful not to drop AIBO while lifting it.
- Do not touch the charging terminal with your hand. Doing so may soil the terminal and cause poor contact.

---

## 2 Insert the “Memory Stick,” and replace the cover.

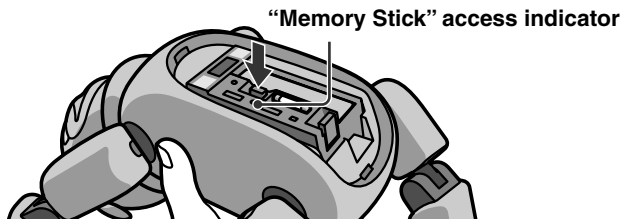
With the ▼ mark pointed downward and the rounded corner facing the tail, insert the “Memory Stick” into the “Memory Stick” insertion slot until it clicks into place.



## Removing the “Memory Stick”

Before removing the “Memory Stick” from AIBO, press the pause button on AIBO’s back to make AIBO pause, and then remove the cover to confirm that the “Memory Stick” access indicator is turned off.

Press the ▲ button on AIBO’s inner unit, and then remove the “Memory Stick.”



### Note

The “Memory Stick” cannot be removed while the “Memory Stick” access indicator lights up red. Do not try to remove the “Memory Stick” by force during this time.

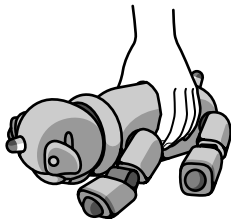


# Starting up AIBO

---

## **1** Place AIBO on the floor as shown below.

Place it on a flat, non-slippery surface, such as a carpet with a short nap.



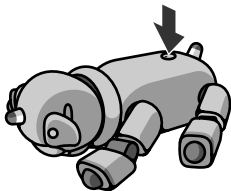
### **Notes**

- If you place AIBO on a slippery floor or a carpet with a long nap, it may tend to fall often, fail to go forward, or have a tendency to jam up.
- Be sure to place AIBO on the floor as shown above. This will prevent AIBO from moving unexpectedly and being damaged when you press and release the pause button to start AIBO.

---

## 2 Push and release the pause button on AIBO's back.

AIBO's pause mode is canceled and the back light lights up green. Wait for a while until AIBO starts to move under the control of the inserted AIBO-ware "Memory Stick."



### Note

If an abnormality occurs or if you catch your finger in one of AIBO's joints, press the pause button on AIBO's back.

---

## For details on playing with AIBO from this point on

Refer to the "User's Guide" supplied with the AIBO-ware.

## When not playing with AIBO

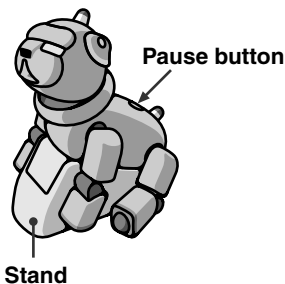
We recommend that you charge the battery pack (page 24) so that AIBO will be ready to play at any time.

### Pausing AIBO

Press the pause button on AIBO's back. The back light flashes green, and then turns off after a while. Place AIBO on the supplied stand at this time.

#### Notes

- Before placing AIBO on the stand, be sure to press the pause button on AIBO's back to make it pause. If AIBO is in active mode when placed on the stand, it may move, tumble off and damage itself.
- The battery pack will not charge if you merely place AIBO on the stand without pressing the pause button.



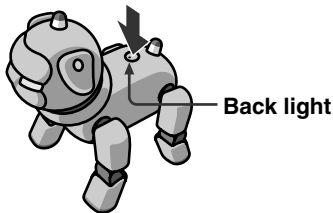
## Replacing the battery pack

It is possible to use the supplied AC adapter and the conversion plug to charge the battery pack while it is still inserted into AIBO. You can also change the battery pack in AIBO with another pack that has been charged.



### Note

Use only the supplied battery pack type ERA-301B1.

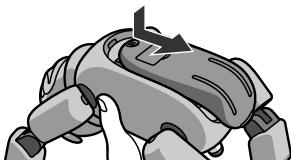
- 1 Press the pause button and wait until the back light turns off.**



### Note

While AIBO is accessing the “Memory Stick,” the “Memory Stick” access indicator lights up red. During this time, the BATT  latch and  button are deactivated and the battery pack and “Memory Stick” cannot be removed until the data-saving procedure has been completed. Do not try to remove the “Memory Stick” by force during this time.

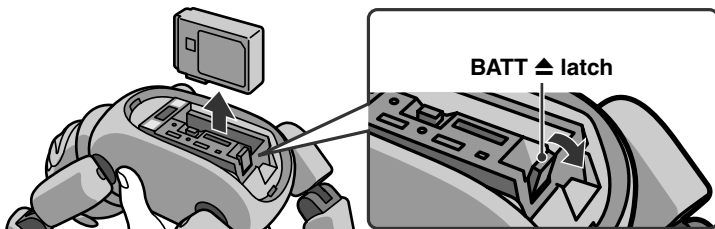
- 
- 2** Grasp AIBO securely by the body, turn it upside down, and remove its cover by pushing the ▲ mark towards AIBO's tail.



**Notes**

- Lift AIBO by the body, and not by its extremities. Do not hold AIBO by its collar. Your finger may get caught between the collar and AIBO's head or body.
- AIBO's surface is very smooth. Be careful not to drop AIBO while lifting it.
- Do not touch the charging terminal with your hand. Doing so may soil the terminal and cause poor contact.

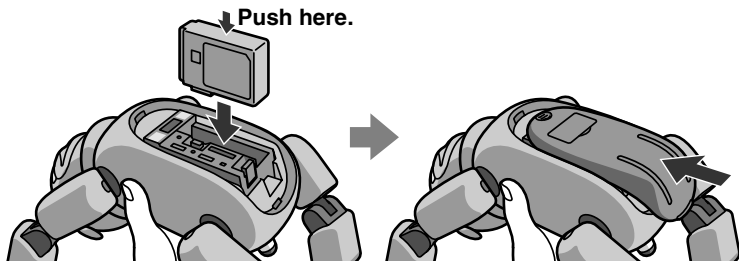
- 
- 3** Flip the BATT ▲ latch towards AIBO's tail to remove the battery pack.



### Notes

- When removing the battery pack, be sure to hold it securely so that it does not fall.
- When the “Memory Stick” access indicator lights up, the battery pack is locked. Removing it forcibly at this time may damage AIBO.

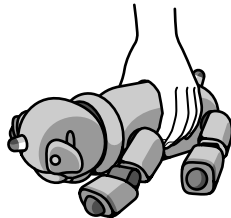
## 4 Insert the charged battery pack in the direction of the arrow until the pack clicks into place, then replace the cover.



## 5 Place AIBO on the floor as shown below.

### Note

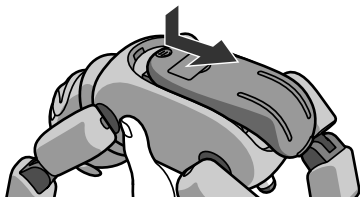
Be sure to place AIBO on the floor as shown to the right. This will prevent AIBO from moving unexpectedly and being damaged when you press and release the pause button to start AIBO.



## Setting the volume level of the musical tone

Before setting the volume level, be sure to press the pause button on the back to make AIBO pause.

- 1** Grasp AIBO's body securely, turn it upside down, and remove its cover by pushing the ▲ mark towards AIBO's tail.



### Notes

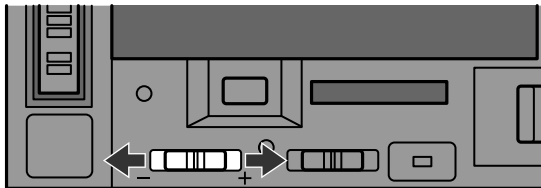
- Lift AIBO by the body, not by its extremities. Do not hold AIBO by its collar. Your finger may get caught between the collar and AIBO's head or body.
- AIBO's surface is very smooth. Be careful not to drop AIBO while lifting it.
- Do not touch the charging terminal with your hand. Doing so may soil the terminal and cause poor contact.

---

**2** Slide the **VOLUME** switch to adjust the volume level, then replace the cover.

To increase the volume level, slide the switch towards the + position; to decrease the volume level, slide it towards the – position. When you release the switch, it returns to the center position.

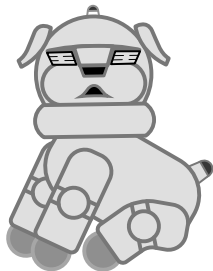
There are four volume levels, including mute. Each time you slide the switch the level increases or decreases by one level.





## ***Additional information***

This chapter provides notes on usage, a troubleshooting guide, and other information concerning AIBO.



## **Notes on use**

To prevent AIBO and its accessories from being damaged, observe the following precautions.

### **On handling AIBO**

- Do not use AIBO in places subject to vibrations, on an incline, or at a place where it might fall.
- Do not press down hard on AIBO with your hand or elbow.
- Do not drop or shake AIBO as this may damage AIBO or cause data saved to the “Memory Stick” to be lost.
- Do not touch the charging terminal directly with your hand. Doing so may soil the terminal and cause poor contact.
- Lift AIBO by the body, and not by its extremities, such as the head, ears, collar, tail or legs. Do not swing or twist AIBO.
- Do not leave AIBO in very hot places, such as a car parked in the sun, as this may deform or damage it.
- Do not allow foreign things, such as paper clips, to get into AIBO or its joints.
- Do not use AIBO outdoors. If you do, moisture or other foreign matter may enter AIBO and cause damage.
- Do not use AIBO on concrete or other hard surface as this may damage AIBO.
- Do not use AIBO on slippery floor or on a carpet with a long nap. If you do, AIBO may tend to fall often, fail to go forward, or have a tendency to jam up.

- Do not allow AIBO to get wet.
- Do not use force to interfere with any of AIBO's movements.
- Do not touch the lens of the color camera or distance sensor directly with your hand.
- Do not apply stickers to the color camera or the distance sensor.
- Do not point the color camera at the sun, whether AIBO is turned on or off, as this may damage the camera.
- Do not oil AIBO's joints or other movable parts.
- Do not apply stickers to AIBO's movable parts or insert anything between them as this may interfere with AIBO's movement.
- Do not disassemble or modify AIBO.
- When transporting AIBO, put it in a cushioned box like the one it came in to protect its body, head, tail and legs from damage.
- If you do not use AIBO for a long period of time, disconnect the AC adapter from the wall outlet.
- Do not use AIBO in a place subject to strong electromagnetic waves or X-rays.
- Do not place a card with a magnetic strip or a magnetic recording medium close to the AC adapter conversion plug. The magnet inside the conversion plug may erase the data recorded on the magnetic medium.
- The AIBO-ware applications designed for ERS-110/111 cannot be used with ERS-31L.
- ERS-31L may not operate with some AIBO-ware applications designed for ERS-210/220. And even if operable, there may be limits on some of the functions.

## **Moisture condensation**

If AIBO is brought directly from a cold place to a warm place, moisture may condense on AIBO's inside or outside surface, causing damage. If moisture condensation has occurred, wait for about one hour before operating AIBO.

## **On handling the AC adapter**

- Be sure to use only the supplied AC adapter to charge AIBO's battery pack. Using any other adapter may cause damage to AIBO.
- Do not connect the AC adapter to electronic transformers designed for use by travelers, as this may cause AIBO to heat up or become damaged.

## **On handling the battery pack**

- Do not expose the battery pack to temperatures above 45 °C (113 °F), such as in a car parked in the sun.
- Be careful not to let foreign matter like dust or sand get into the terminals.
- If you are not going to play with AIBO for a long period, remove the battery pack from AIBO and store it in a dry, cool place.
- The battery pack is constantly discharging even when it is not in use. Charge the battery pack right before using AIBO.
- Do not drop the battery pack or place heavy object on it. Do not apply strong pressure or physical shock to the battery pack.

## **On cleaning**

- Clean AIBO with a clean, dry, soft cloth.
- Do not use volatile solvents that may damage AIBO's surface finish.
- When cleaning with chemical fabric, see its instructions.

# Troubleshooting

Before contacting the AIBO Customer Link regarding a problem, we recommend that you use clinic mode to check AIBO's balance and sensors, and refer to "Symptoms and remedies" (page 50).

## Clinic mode

If you start up AIBO without inserting an AIBO-ware "Memory Stick," AIBO enters clinic mode in which its sensors and other parts are checked. The mode indicator turns off at this time. If afterwards the problem persists, contact the AIBO Customer Link (page 8).

## Changing AIBO to clinic mode

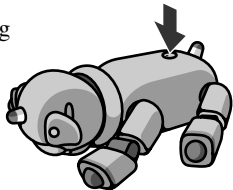
---

**1** Remove the AIBO-ware "Memory Stick" from AIBO (page 32).

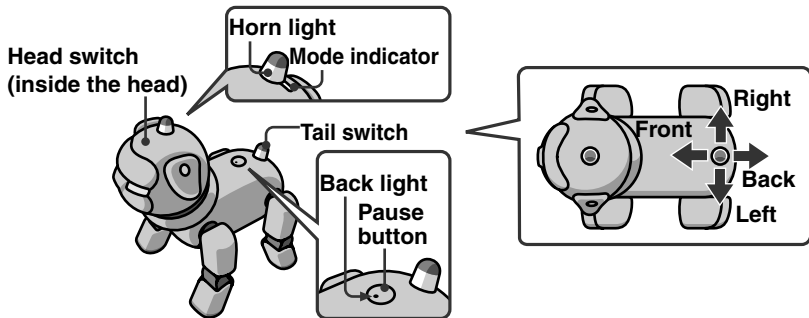
---

**2** Place AIBO on the floor as shown below, and then press the pause button on its back (page 34).

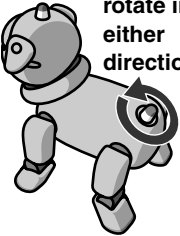
AIBO enters clinic mode and repeats the following sequence of actions: stands up, sits down, lies down.



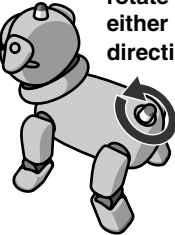
## Check list for clinic mode



Item	Procedure
Operation of the tail switch and AIBO's overall balance	<ol style="list-style-type: none"><li><b>1 Push the tail switch to AIBO's right for three seconds.</b> AIBO does the following sequence of actions: walks forward, walks backward, kicks with its right front leg, kicks with its left front leg. AIBO's horn light lights up in three colors during this time. AIBO then resumes the repetition of the original sequence of actions: stands up, sits down, lies down.</li><li><b>2 Push the tail switch to AIBO's left for three seconds.</b> AIBO does the following sequence of actions: sits, waves with its right front paw, waves with its left front paw, raises both front paws. AIBO's horn light lights up in three colors during this time.</li></ol>

Item	Procedure
<p>Sensitivity of the paw switches</p> <p><b>You can rotate in either direction</b></p> 	<ol style="list-style-type: none"> <li><b>1 Rotate the tail switch once.</b> AIBO lies down with all legs sprawled out.</li> <li><b>2 Touch a paw switch.</b> AIBO pulls in the touched paw.</li> <li><b>3 Rotate the tail switch again.</b> AIBO resumes the repetition of the original sequence of actions again: stands up, sits down, lies down.</li> </ol>
<p>Sensitivity of AIBO's head switch</p>	<ol style="list-style-type: none"> <li><b>1 Push the head gently to make AIBO look down.</b> The horn light lights up green.</li> <li><b>2 Push the head gently to make AIBO look up.</b> The horn light lights up orange.</li> </ol>
<p>Sensitivity of the color camera</p>	<ol style="list-style-type: none"> <li><b>1 Move the supplied pink ball close to the color camera (AIBO's mouth).</b> When the camera detects the ball, the horn light lights up blue. If the ball is too close or too far, the camera may not be able to detect it. Adjust the distance between the ball and the camera.</li> </ol>

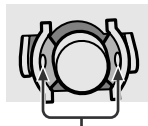
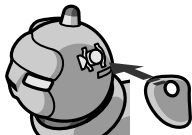


Item	Procedure
<p>Sensitivity of the distance sensor</p> <p><b>You can rotate in either direction</b></p> 	<ol style="list-style-type: none"> <li><b>1 Rotate the tail switch once.</b> AIBO lies down with all legs sprawled out.</li> <li><b>2 Place your hand or other object over the distance sensor (AIBO's nose).</b> When the distance sensor detects the object, a beep is emitted. (When the volume level of the musical tone is set to mute, no beep is emitted.) The pitch of the beep changes depending on the distance between the object and the sensor. If the object is too close or too far, the sensor may not be able to detect it. Adjust the distance between the object and the sensor.</li> <li><b>3 Rotate the tail switch again.</b> AIBO resumes the repetition of the original sequence of actions: stands up, sits down, lies down.</li> </ol>
<p>Pick-up mode</p>	<ol style="list-style-type: none"> <li><b>1 Pick AIBO up from the floor.</b> AIBO stops moving, its legs become loose and the mode indicator turns on. If you pick it up too slowly, the legs may not become loose. In this case, keep holding AIBO and push the tail switch away from AIBO's head for three seconds.</li> <li><b>2 Place AIBO on the floor or push up the tail switch towards AIBO's head for three seconds.</b> AIBO resumes the repetition of the original sequence of actions: stands up, sits down, lies down.</li> </ol>

## Symptoms and remedies

If you experience any of the following difficulties, use this table to help you remedy the problem. Should any problem persist, contact the AIBO Customer Link (page 8).

Symptom	Cause/Remedy
AIBO does not move.	<p>AIBO has been picked up from the floor or an object is caught in one of AIBO's joints.</p> <p>→ Place AIBO on the floor and push the tail switch towards AIBO's head for three seconds. AIBO stops moving whenever it is picked up from the floor (the mode indicator lights up) or an object is caught in one of AIBO's joint (the mode indicator flashes).</p> <p>The battery pack is drained.</p> <p>→ Charge the battery pack (page 24). When the battery pack is completely drained, the back light turns off and AIBO stops moving.</p>
AIBO's ear came off.	<p>→ Align the center of AIBO's microphone with the center of the ear hole, and then press the holes on the back of AIBO's ear against the projections on both sides of the microphone until the ear snaps into place.</p>



**Projections**

Symptom	Cause/Remedy
<p>AIBO does not react to release of the pause button.</p>	<p>The battery pack is not inserted or it is not fully inserted.</p> <p>→ Insert the battery pack fully (page 22). Restart AIBO by pressing the pause button again.</p> <p>The battery pack is drained.</p> <p>→ Charge the battery pack or replace with the charged one.</p> <p>The AC adapter is connected to the charging terminal of AIBO.</p> <p>→ Disconnect the AC adapter and press the pause button again.</p>
<p>Charging of the battery pack does not start after connecting the AC adapter to a wall outlet.</p>	<ul style="list-style-type: none"> <li>• The AC adapter is not connected to the AC adapter conversion plug securely.</li> <li>→ Connect it to the conversion plug securely.</li> <li>• The AC adapter conversion plug is not connected to AIBO's charging terminal securely.</li> <li>→ Connect it to the charging terminal securely.</li> <li>• The battery pack is not inserted or it is not fully inserted.</li> <li>→ Insert the battery pack fully (page 22).</li> </ul>
<p>When you press the pause button, the back light flashes in orange and green alternately, and the beep sound is emitted.</p>	<p>Heat may have built up in the battery pack.</p> <p>→ Wait for a while until the battery pack becomes cool.</p>

Symptom	Cause/Remedy
AIBO continues to emit a sad melody and does not move when the pause button is released.	<ul style="list-style-type: none"> <li>• The insertion of a “Memory Stick” without any AIBO-ware.</li> <li>• The insertion of a “Memory Stick” that is not intended for AIBO ERS-31L.</li> </ul>
It takes a long time for AIBO to start moving.	AIBO is loading the data from the “Memory Stick.” Wait for a while.
AIBO tries to walk but it does not go forward.	<p>The floor may be slippery or the nap of the carpet is long.</p> <p>→ Place AIBO on a surface that is not too slippery, such as a carpet with a short nap.</p>
AIBO falls often.	<p>The floor may be too slippery, inclined or unstable.</p> <p>→ Place AIBO on a flat surface that is not too slippery.</p>
After picking AIBO up, it stops moving.	<p>AIBO stops moving whenever it is picked up from the floor.</p> <p>→ Check that the mode indicator is on, place AIBO on the floor, and then push up the tail switch towards the head for three seconds.</p>
The mode indicator is on or flashing and AIBO emits musical tones, but it does not walk.	<p>AIBO stops moving whenever it is picked up from the floor or an object is caught in one of AIBO’s joints.</p> <p>→ Place AIBO on the floor, and then push up the tail switch towards the head for three seconds.</p>

Symptom	Cause/Remedy
The back light flashes in orange.	There may be a problem with the battery pack. → Check that the battery pack is inserted correctly. If the flashing of the back light persists, contact AIBO Customer Link (page 8).
AIBO does not chase the supplied ball.	When no AIBO-ware “Memory Stick” is inserted, AIBO responds to the ball, but does not chase it.
The back light does not turn off when you press the pause button to make AIBO pause.	The internal application may not be terminated normally. → Remove the battery pack (page 36). Re-insert the battery pack and press the pause button again. If the BATT ▲ latch is inoperable, use the emergency release hole (page 19).
AIBO soon asks for charging even with a fully charged battery pack.	When the battery pack’s operating time has become noticeably short, it may have reached its end of life. Replace it with a new battery pack.
No musical tone is emitted from AIBO.	AIBO’s musical tone is muted. → Adjust the volume level (page 39).

## **Limited warranty (for the U.S.A. only)**

SONY ELECTRONICS INC. (“SONY”) warrants this Product and its accessories against defects in material or workmanship as follows:

1. **PRODUCTS:** For a period of one (1) year from the date of purchase, SONY will, at its option, either repair or replace the defective parts and/or the Product (*i.e.*, AIBO) with new or rebuilt replacements. After this one (1) year period, you must pay all parts and labor charges.
2. **ACCESSORIES:** For a period of thirty (30) days from the date of purchase, SONY will, at its option, either repair or replace defective parts and/or accessories (*i.e.*, AC adapter and battery pack) with new or rebuilt replacements. After this thirty (30) day period, you must pay all parts and labor charges.
3. **REPAIRS:** For a period equal to the longer of (a) the remainder of the original limited warranty period on the original Product or accessory, or (b) for 90 days after the date of repair/replacement of Products or for 30 days after the date of repair/replacement of accessories, SONY will repair or replace defective parts, accessories and/or Products used in the repair or replacement of Products or accessories under this Limited Warranty with new or rebuilt replacements.

To obtain warranty service, you must first obtain an event number from AIBO Customer Link (page 8). You will need to return the Product and all accessories to SONY in the original carton, using the original packaging materials. All supplied accessories must be returned with the Product. SONY is not responsible for any damage during shipment arising from the failure to properly pack the Product or accessory being returned to SONY or from any damage caused by or resulting from the carrier’s handling. For information on returning your Product or accessories for warranty repair, please contact the AIBO Customer Link.

This warranty does not cover customer instruction, installation or set up adjustments.

This warranty does not cover the cost of removal or reinstallation, cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence of, or to any part of the Product. This warranty does not cover lost profits, lost sales, loss of use of the Product, or other consequential loss or damage due to improper operation or maintenance, installation, connection to improper voltage supply, or attempted repair by anyone other than a facility authorized by SONY to service the Product. This warranty does not cover Products sold AS IS or WITH ALL FAULTS, or consumables (such as fuses). This warranty does not apply when the malfunction results from use of the Product in conjunction with accessories, products or ancillary or peripheral equipment not manufactured by SONY, and where it is determined by SONY that there is no fault with the Product itself.

SONY will pay shipping charges for all in-warranty service. However, if no trouble is found with the Product or accessory, if the trouble is from a non-covered charge or if it is determined that the warranty period has expired, you will be billed for the cost of shipping and handling.

This warranty is valid only in the United States.

Proof of purchase in the form of a bill of sale or receipted invoice which is evidence that the unit is within the Limited Warranty period must be presented to obtain warranty service.

This warranty is invalid if the factory applied serial number has been altered or removed from the Product.

---

REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER. SONY SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESSED OR IMPLIED WARRANTY ON THIS PRODUCT. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED IN DURATION TO THE DURATION OF THIS LIMITED WARRANTY.

---

Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

For your convenience, SONY ELECTRONICS INC. has established telephone numbers for product information regarding the Entertainment Robot. Please call:

AIBO CUSTOMER LINK

1-800-427-2988

or write to: [aibosupport@info.sel.sony.com](mailto:aibosupport@info.sel.sony.com)

Other information about AIBO is also available on the internet site at:  
[www.aibo.com/](http://www.aibo.com/)



## ***Service procedure (for the U.S.A. only)***

- 1. Contact the AIBO Customer Link. The E-mail address is [aibosupport@info.sel.sony.com](mailto:aibosupport@info.sel.sony.com) and its toll free number is 1-800-427-2988.**
- 2. If the AIBO Customer Link determines that your unit needs repair, follow the procedure described below.**
  - a. The AIBO Customer Link will give you the event number, which is valid for ten days.
  - b. Following the procedure described on the label attached to the box, put AIBO and the designated accessories into the original box. If you did not keep the original box, the AIBO Customer Link will send a new box to you free of charge within the warranty period. The actual shipping and material cost will be charged to you after the warranty period.
  - c. Mark your event number on the top of the box and send it to the designated address. The AIBO Customer Link will designate the shipping method and pay the shipping charges within the warranty period; after the warranty period, you must pre-pay the shipping charges.
  - d. As soon as the repair is completed, your AIBO will be sent back to you. After the warranty period has expired, the actual shipping cost will be charged to you together with the repair cost.
- 3. Please understand that the AIBO Customer Link only accepts credit cards for all the charges of repair, shipping and material after the warranty period has expired.**

### ***User registration***

All users are registered based on information from the purchaser.

If a different person takes over this unit, please inform the “AIBO Customer Link” of the change.

# Specifications

## AIBO

CPU	64-bit RISC processor
Main memory	32MB
Supplied application media	“Memory Stick” for AIBO
Movable parts	Head: 3 degrees of freedom Leg: 3 degrees of freedom ×4 (15 degrees of freedom in total)
Inputs	Charging terminal
Input switches	VOLUME switch RESERVED switch
Video input	100,000-pixel CMOS image sensor
Audio input	Stereo microphones
Audio output	Speaker

## Internal sensors

Infrared distance sensor  
Acceleration sensor  
Switches in the head, on the tail, and on the paws  
Inclination sensor  
Vibration sensor

## Power consumption

Approx. 5 W (in normal mode)

## Operable duration

Approx. 2.5 hours (when operated with a fully-charged ERA-301B1, in normal mode)

Dimensions Approx. 177 × 280 × 240 mm  
(7 × 11 <sup>1</sup>/<sub>8</sub> × 9 <sup>1</sup>/<sub>2</sub> inches) (w/h/d)

Mass Approx. 1.5 kg (3 lb 5 oz) (including the battery pack and the “Memory Stick”)

## Operating temperature

5° C to 35° C (41° F to 95° F)

## Operating humidity

10 % to 80 % (not condensed)

## Operating wet-bulb temperature

Less than 29° C (84° F)

### Storage temperature

-10° C to 60° C (-4° F to 140° F)

### Storage humidity

10 % to 90 % (not condensed)

### Storage wet-bulb temperature

Less than 29° C (84° F)

## Stand

Dimensions Approx.  $109 \times 97 \times 228$  mm  
( $4 \frac{3}{8} \times 3 \frac{7}{8} \times 9$  inches) (w/h/d)

Mass Approx. 180 g (6 oz)  
(including the battery pack and the “Memory Stick”)

## AC adapter

Input 120 V AC, 50 - 60 Hz, 0.75 A

Output 16 V DC, 2.5 A

### Operating temperature

5° C to 35° C (41° F to 95° F)  
(temperature gradient less than 10° C (50° F)/hour)

### Operating humidity

20% to 80% (not condensed), provided that humidity is less than 65% at 35° C (95° F) (wet-bulb temperature: less than 29° C (84° F))

### Storage temperature

-20° C to 60° C (-4° F to 140° F) (temperature gradient less than 10° C (50° F)/hour)

### Storage humidity

10% to 90% (not condensed)

Dimensions Approx.  $60 \times 30 \times 120$  mm  
(w/h/d) (Approx.  $2 \frac{3}{8} \times 1 \frac{3}{16} \times 4 \frac{3}{4}$  inches)

Mass Approx. 325 g (11.5 oz.)

Cord length DC cord: Approx. 1.8 m (70  $\frac{7}{8}$  inches)  
AC power cord: 1.8 m (70  $\frac{7}{8}$  inches)

## Lithium ion battery pack

Battery used Lithium ion type battery

Main output voltage

7.4 V DC

Capacity 1700 mAh

Operating temperature

5°C to 40°C (41°F to 104°F)  
(temperature gradient less  
than 10°C (50°F)/hour)

Operating humidity

10% to 80% (not condensed)

Operating wet-bulb temperature

Less than 29°C (84°F)

Storage temperature

-20°C to 60°C (-4°F to  
140°F) (temperature gradient  
less than 10°C (50°F)/hour)

Storage humidity

10% to 90% (not condensed)

Storage wet-bulb temperature

Less than 35°C (95°F)

Dimensions Approx. 72 × 53.6 × 21 mm  
(Approx.  $2\frac{7}{8} \times 2\frac{1}{8} \times \frac{27}{32}$   
inches ) (w/h/d)

Mass Approx. 112 g (4 oz)

Design and specifications are subject  
to change without notice.

## Supplied accessories

See page 15.

# Index

## A

- AC adapter ..... 15, 24
- AC adapter conversion plug ..... 15, 24
- AIBO
  - Cleaning ..... 45
  - Handling ..... 42
  - Pausing ..... 35
  - Starting up ..... 33
- AIBO Customer Link ..... 8, 56, 57
- AIBO-ware ..... 14

## B

- Back light ..... 17, 26
- BATT ▲ latch ..... 19, 37
- Battery pack
  - Charging ..... 24
  - Handling ..... 44
  - Inserting ..... 22
  - Insertion slot ..... 19
  - Replacing ..... 36

## C

- Charging terminal ..... 19, 25
- Clinic mode ..... 46
- Color camera ..... 17

## D

- Decorative plate ..... 20
- Distance sensor ..... 17

## E

- Emergency release hole ..... 19
- Energy Station Core ..... 27

## H

- Head ..... 17
- Head switch ..... 47
- Horn light ..... 17

## M

- “Memory Stick”
  - Access indicator ..... 19, 32
  - Inserting ..... 30
  - Insertion slot ..... 19
  - ▲ button ..... 19, 32
  - Removing ..... 32
- Mode indicator ..... 17

## P

- Pause button ..... 17, 34, 35
- Pause mode ..... 30, 34-36
- Paw switches ..... 17

**S**

Shutter for charging terminal ...	18, 25
Speaker .....	17
Stand .....	15, 20
Stereo microphone .....	17

**T**

Tail switch .....	17
-------------------	----

**V**

Volume level .....	39
VOLUME switch .....	19, 40

## ***Designer of AIBO ERS-31L***



### **Katsura Moshino**

#### **Artist/Illustrator/Visual Creator**

Born in 1968, Katsura Moshino began doing illustration and artwork for the night club scene in the mid-80s. He has produced cutting-edge and highly original work in Japan and abroad in a wide variety of areas, including CD jackets, music magazines, advertising, product design, package design, and music video production. His published collections include “Moshino’s Works for Girls Studio” (Kawade Shobo).



**eco**  
info

Printed on 100% recycled paper using  
VOC (Volatile Organic Compound)  
free vegetable oil based Ink.

Printed in Japan © 2002 Sony Corporation



\* 4 6 6 4 5 4 8 1 1 \* (1)